[YLEM]

These last few months I was immersed in producing a show entitled Dis•M•Body with transdisiplinary artist Amy Youngs at the Acme Gallery in San Francisco. We created visual metaphors to explore the notion that we have become disembodied, in the sense that it has become increasingly more difficult to know where the individual body begins and our extended senses end.

Telephones, radios, TVs, satellites and computers all amplify our experience and clarify "frequencies" of knowledge through structure and extend specific senses, but they simultaneously fracture and dislocate our sense of self, creating new forms of interconnection and conception. A new sensorium is forming. The rhythmic perpetual present, with images, sounds and ideas replacing yesterday's, before yesterday's have been fully absorbed and acted on.

There is no longer an argument about the brain/body dichotomy. The body and its multiple senses are a part of the total sensorium we call consciousness and the brain. But what of the visual, aural, and ideational spaces created by the media and information services of the world, are these a part of our body? I would argue that they are a part of our sensorium. As we continue to accept these mechanical and electronic prosthesis (machine as tool, as link, as informer) we must also understand their effects on our sensorium.

Optical and electronic lenses create forms of amplification distortions. The television camera's distortion through sequencing and framing is notorious as a manipulator of meaning. Television, especially presents challenges to children who have experienced little real world human interaction and do not have comparative models of appropriate social behaviors. The mass media's divisive use of violence has conditioned a fear that the world is indeed more dangerous than it is. I wonder if we were made to sympathetically feel the pain of every drama or murder or disaster we watched if it would effect our ability to feel compassion, and act. YLEM artist Barbara Lee says we have become a society of scanners, watching and not acting.

When the FCC was chartered with dividing the airwaves to the good of the public, who would have know that these would have been hijacked so completely by the commercial system with it's subtext of consumption, which dominates most content. As a connection device the telephone has a strange and distant intimacy. It places emphasis on the actual meaning of words removing context and perspective. But at least it is distributed and we determine content. All machines are not created equal. As an interactive tool the computer is a radically different machine or tool than all the others that have proceeded it. For one, it stores our concerns and ideas and acts as an ideational organizer, but its greatest possibility lies with its ability to provide feedback.

With the internet, the power of individuals to broadcast to many is upon us. Language barriers that have formerly separated countries will fall by the wayside with intelligent translator agents. Indeed we are likely to have an enormous number of intelligent agents each designed to custom filter to our desires and information needs. I believe this will cause increasing specialization as opposed to homogeneity that other forms of media seem to favor. But the ease of acting at a distance still carries great dangers.

What are needed are sensory feedback suits that let us feel the results of our actions at a distance. An evolved form of human connection. Indeed electronic communications of this form in particular may help us realize that the individual self-is, as Villem Flusser has said, "a knot embedded in a relational network of others."

In this November/December Ylem issue we have Roman Verostko featured on the cover with his epigenetic art in which the artwork (phenotype) is grown from his custom software (genotype). Will Gordan discusses art for the new millennium with a restored renaissance of the Human Spirit, Tamiko Thiel writes an article charting the relationship between our conception of self and technology of the time and Eleanor Kent gives a lively report from the ISEA 1995 conference in Montreal.
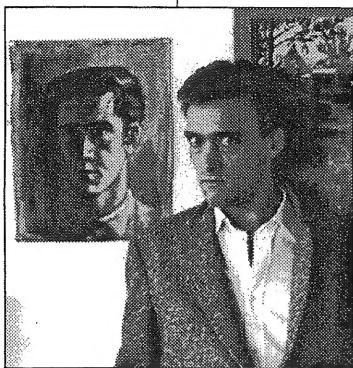
c o v e r   i m a g e   b y   r o m a n   v e r o s t k o

Inspired by the pioneers of "abstract art" Verostko's work has always shown a special interest in "unseen" forms - those forms that appear original and are of a type we have not seen before. Fifteen years ago he began experimenting with frontiers of "unseen" form made accessible to artists with computers. By composing his own software to drive a pen plotter, he learned how to achieve original forms with a personal style, using archival quality materials.

The studio procedure employs pen and brush strokes that are generated with his software and executed by machine. For brush strokes, Chinese brushes have been adapted to fit the plotter's drawing arm. The pen and brush strokes display qualities associated with his own hand. The routines also generate text-like elements associated with manuscripts and oriental calligraphy. Some of the works, reminiscent of medieval manuscripts, are enhanced with a touch of gold leaf crafted in the traditional way.

Roman Verostko

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Minneapolis, Minnesota 55419

Tel/Fax: (612) 822-3800

roman@mcad.edu

Playful Brains = Playful Machines, was November 1st at the McBean Theater, The Exploratorium. Ken Goldberg gave a talk entitled, The Mind/Body Gap in Digital Art. Most art has a physical component: something we encounter with our bodies. Computer art often lacks this: it is displayed behind the smooth glass of a monitor or the smooth surface of a dye sublimation print. The result is often perceived as sterile and lacking in what Walter Benjamin called "aura". Goldberg says, "I'm trying to understand what's at stake when we neglect the body in our increasingly digitized culture."

Ken Goldberg is an engineer on the faculty at UC Berkeley. His art has been exhibited both in the US and in Europe, in four SIGGRAPH Art Shows, and in the Los Angeles Biennial. In 1995 he shared the Kobe Prize at the Interactive Media Festival and was named a Presidential Faculty Fellow by the NSF.

Sylvia Pengilly: Art and Music from Brainwaves. Sylvia Pengilly is Professor Emeritus of music at Loyola University in New Orleans. Last time she gave a presentation for Ylem she received a standing ovation. She demonstrated the Interactive Brainwave Visual Analyzer (IBVA), a device that registers brain activity and introduces both the frequency and the voltage of the existing brainwave into the computer where they can be used to trigger many different events, including MIDI. Pengilly wore a brain wave signal-detecting device to see her brainwaves in three dimensional graphics, then used them to trigger graphic events and to create music by interfacing with MAX.

Michael Kan: Computer Memory Traces as Art. Kan, inventor of the NaturalVision video camera, gave a demonstration of the surprising graphical aspect of computers.

Video Presentations: Interactive Emergent Systems, the work of **Ken Rinaldo** and **Mark Grossman**; A-Volve, a recent work by **Christa Sommerer & Laurent Mignonneau** Hypergraphics, four-dimensional artworks (tape courtesy of InterCommunication Center, Tokyo).

The September-October issue of Adobe Magazine did a four-page, full-color spread on the work of **Diane Fenster.**

In San Jose, Costa Rica, **Lillian Bell** introduced the idea of collaborative art at a distance with a show of Fax art.

Ken Rinaldo is on his way to V2 DEAF 95 (Dutch Electronic Arts Festival) in Rotterdam he will be showing the Fish Walker (Delicate Balance) and The Flock.

Mathematical artist **Ronald R. Brown** showed work at Ars Scientifica exhibition and gave a paper at the ISIS-Symmetry Congress.

At ISEA 95, **Bruce Sterling** gave a rousing talk around the idea that we live in The Golden Age of Dead Media (out-of-date machines for communicating). **Sonya Rapoport** exhibited the computer-assisted Transgenic Bagel for which **Craig Harris** composed the sound. Other members on the program at ISEA 95 included: **Phillippe Boissonet, Paul Brown, Hans Dehlinger, Georges Dyens, Troy Innocent, Eduardo Kac, Vince Koloski** and **Marc Trembley.**

Flash Light has been in a number of shows recently, among them the ReproHistory Project, Atlanta, GA, Recycling with Imagination, Kansas City, MO, and Art and Technology, Stonybrook, NY.

Corrine Whitaker collaborated with **Tony Culver** in the exhibit, "Reality Bytes" in Whittier, CA.

In Leonardo, Vol. 28, #4, look for contributions by **Anna Campbell Bliss, Sarah Jackson, Flash Light, Lucia Grossberger Morales, Clifford Pickover, Sonya Rapoport** and **Roman Verostko.**

Art For A New Millennium:

A neurobiological perspective
by Will Gordon, PhD

To paraphrase Mark Twain, "It is not wise to make predictions, especially about the future." I have also heard that the future is like the present, only longer. As a "mad" brain scientist, and as director of two medical seminar organizations, I work with a variety of artists to create conceptual materials for our brochures.

Art in the 20th century has been predominantly two dimensional, static, immobile, non-interactive, limited to the visual modality, created by a single person, displayed on a wall, and based on the human body, landscapes or abstract designs.

Art in the 21st century will be multidimensional, dynamic, in motion, interactive, multisensory, displayed as three-dimensional environments. Here are the possibilities I see in how this changes our sense of ourselves and being with each other.

Scenario #1: Sequential Art. Although artists do occasionally create sets of paintings rather than individual works, the sets rarely tell a story. The ability to create a language of images that flows in a manner different from film seems to be rich in artistic possibilities for dissolving pigeonholes in the mind. For example, one can create a computerized image of an eye, then enlarge the image the eye to behold what that eye beheld. One can enlarge it further to show the eye of the person looking in, then, (infinite regress) to behold the person seen by the second eye. With multimedia and animation, artists can help us envision time in a new way, especially now that morphing one image into another has become possible. The new exhibit at the Exploratorium, Seeing Time, shows, among other things, a series of pictures a photographer took of his girlfriend/wife over a 50-year period morphed together. Nurses in rest homes would treat people differently if they could see such a profile of each patient!

Scenario #2: Interactive Art. It is now possible for musicians located in different parts of the world to record together by linking the distinct sound they make with a single language known as MIDI. Musicians have no problem blending their conceptions into a single work. Tools are becoming available for visual artists to combine forces to create works with multiple minds. As with music, one can take the same computerized palette and have several layers each conceived by a different mind. The layers can be translucent or opaque. If this is done sequentially, it could relate how the interaction has been working over time. Social interaction patterns could thus be displayed revealing what happens in relationships as seen by each partner (or multiple partners). With courtship, romance, separation, and reuniting illustrated in a series of works, each jointly created, I think an artistically unexplored segment of life could be shared.

Scenario #3: Dreamscapes. I believe that art will more closely parallel one of the most powerful evocations of the human mind, the dimension of dreaming. Surrealism, as far as I am able to tell, comes closest to this state. I imagine, however, that with sequential art, capable of being projected as three dimensional holographic images, with digitized representations of key people and places, it should be possible to create a virtual-reality dream world. The dreamer (artist) can invent a whole world, and as one wanders through the corridors of madness or landscapes of languishing in such a multi-roomed dream gallery, the viewer does not emerge the same person as when she entered.
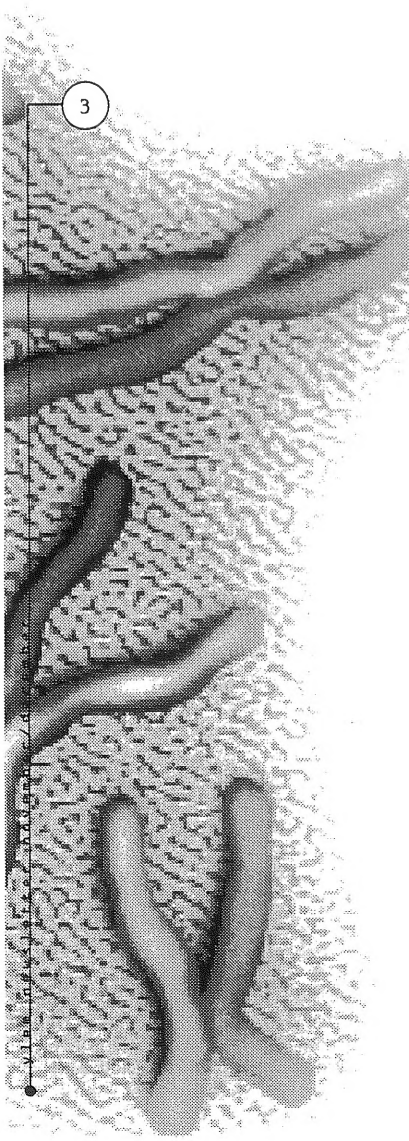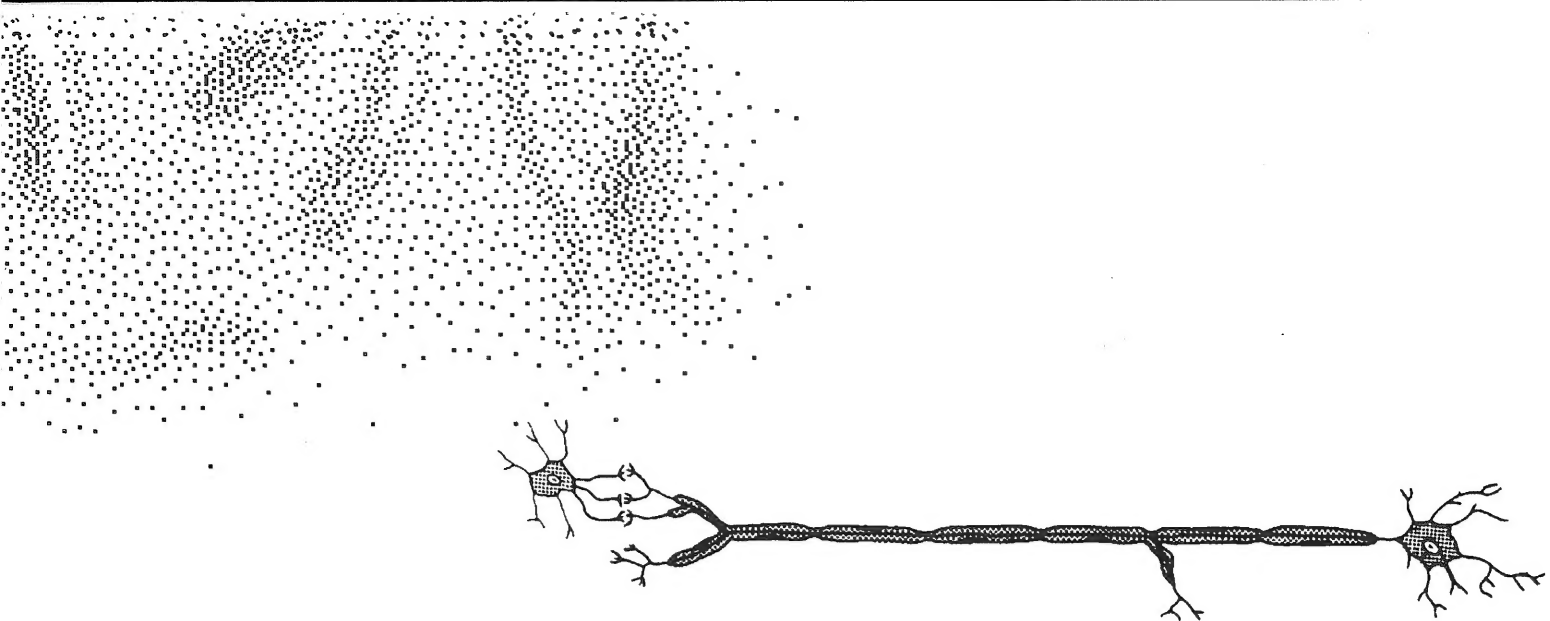
Scenario #4: Observatory as brain. The artist is meditating on a single image, but the image displayed to the audience is a color and sound transformation of the brain waves of each cortical field displayed in magnificent form onto a 360 degree panoramic view. The artist's dearly beloved is now beheld and she too has her brain waves superimposed upon the wall, such that the difference between the two brains' responses are revealed. If one should move, it could be possible to transmit via speakers subsonic vibrations so that one feels tactile sensation. Alternatively, vibratory stimuli can resound in various portions of the room. Though this may be seen as random biologic activity, I surely think there would be segments of this experience which are somehow more coherent and interesting, and these could be saved and recreated. These jam sessions would enliven the artist-collaborators as well as the audience.

Scenario #5 Renaissance of the Human Spirit. I hope some of these inspirations are capable of being expressed rather than the anger, anhedonia, and apathy that so often characterizes the art I have seen all too frequently. Rather than art that is marginalized, and thus takes the role of opposition to political and economic events, I can imagine art that is honored because it redefines the range of human experience. In that realm, new ways of experiencing hope, love, joy, and inspiration can be realized. A renaissance of the human spirit would be gladly welcomed by me in the next century. Expressions of positive emotions can heal and help recreate the wonder of being a child, the wisdom of age, and the power and passion of being alive.

In the 50 years since Hiroshima, we have been plagued by images of a damaged world, whether from radiation, ozone depletion, polluted air and water, overpopulation, the HIV plague, and punk music and post-nuclear motion pictures. It seems to me that we can invent our future by changing the imagery and expectations of our children. It is in our biology to be loving as much as it is to be aggressive, dominant, selfish, and brutal. There has to be a selective survival of loving genes, genes that promote a nuclear family in order to keep alive and healthy a helpless infant until his large brain can mature. It is also in our genes, I believe, to create art into the next millennium that expresses this love. May it be so.

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machina Sapiens
by Tamiko Thiel

The dream of building living machines is perhaps older than the machine itself; the ancient Greek god Hephaestus, for example, built mechanical women to help him in his smithy. The dream of building "machines that think" is much younger, and continues to evolve with our changing perception of the nature of intelligence and thought. In the early 1980s I participated in this dialogue as the visual designer of a machine built to be the first of a new genus: Machina Sapiens, the thinking machine. This article is an informal sketch of some images, historical and fictional, that formed our perceptions of machine intelligence and the computer as "electronic brain."

The ancestors of the modern computer were adding machines built in 17th century Europe. They were called "calculating clocks", having developed from the gear-driven clocks that were the most sophisticated machines of that time. These calculators were decidedly mechanical: one entered the numbers to be added on a set of dials and then rotated the gears with a crank to produce the final sum.

Throughout the 17th and 18th centuries inventors created wonderfully lifelike gear-driven automatons: mechanical ducks who ate, digested and shat food; doll-like human replicas that could write, draw or play the piano. If mechanisms could be created that not only looked human, but also possessed exactly those abilities that separated the accomplished "gentleman" from the uncouth peasant, could machines climb the final hurdle and develop the ability to think?

The mathematician-philosophers of the time said no. Descartes delineated the "rational soul", and with it the ability to think, as the quality that set humans apart from both machines and animals. The latter might be able to "parrot" the sounds of speech, but could not invest those sounds with meaning. Gottfried Leibniz, himself the inventor of one of the early calculators, pointed out that if one were to examine the interior of a machine that seemed to think and have perceptions, one would find nothing but inanimate parts that drive each other, never something that could be the source of thought or perception. In the human body, on the other hand, no matter how closely one examined an organ, one always found a yet smaller "organ" that also contained the vital stuff of life.

The highest level of thought was logic, which involves the ability to follow complicated chains of statements and conditions, consider alternatives and make decisions based on these judgments. The machine invasion of this realm started in the 19th century with the development of tools for machine logic. George Boole showed how the rules of logic could be represented by a digital algebra based on the elements 0 and 1 and simple addition and subtraction. Working separately from Boole, Charles Babbage came up with the fundamental design concepts for a digital universal computer: a programmable machine capable of complicated conditional decision-making.

Unfortunately Babbage never found the funding he needed, so his "Analytical Engine" had to wait for the technological imperative of World War II. In 1943, Howard Aiken built the Mark 1, a computer so close to Babbage's design that Aiken admitted "If Babbage had lived 75 years later, I would be out of a job". This machine was still relentlessly mechanical, however: the sound of its 3000 electro-mechanical relays clacking open and closed reminded a visitor of "a whole room full of little old ladies knitting away with steel needles."

Just two years later John Mauchly and J. Presper Eckert made the Mark 1 obsolete with their "Electronic Numerical Integrator and Computer", lovingly called "ENIAC". ENIAC, composed of over 17,000 electron tubes, was the first machine to be called an "electronic brain". A reporter described ENIAC as being "faster than thought", capable of multiplying 2 10-digit numbers in 3/1000 of a second. Although succeeding decades brought tremendous advances in processing speed and data storage capacity, conceptually the modern computer had arrived. John von Neumann's brilliant summary of ENIAC's successor EDVAC has remained the standard design for single-processor electronic digital computers until this day. (It took a while, however, before popular imagination accepted the "electronic brain" as the height of technical sophistication. Even Von Neumann was described by fellow scientist as having a brain like "a perfect instrument, whose gears mesh with an accuracy of 1/1000 of an inch"!)

When computers became electronic Leibniz's reasoning lost its simple clarity. The workings of any electronic component, just like the workings of a cell in the human body, happen at a microscopic level that removes them from the physical world of mechanical gears to the abstract world of invisible natural forces. Electronic components are no longer so obviously "inanimate" as metal gears. Curiously, at this point Alan Turing also turned Descartes' argument on its head: Turing maintained that in a typed conversation with a hidden machine, if one couldn't tell whether the conversationalist was human or not the machine had to be considered intelligent. This famous "Turing test" is the ultimate meritocracy: it's not what you are; it's what you can do.
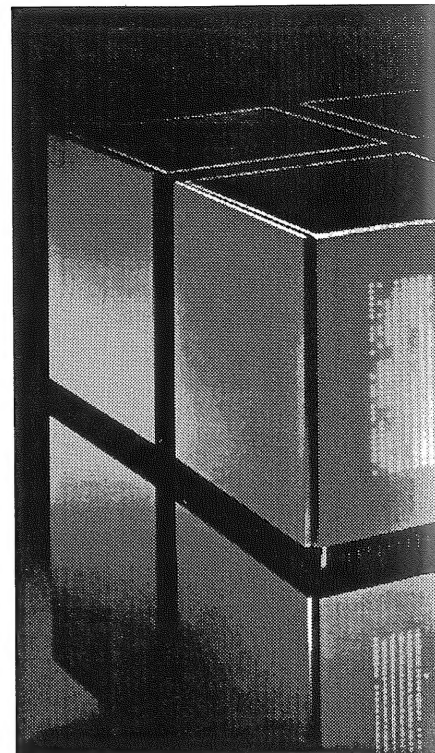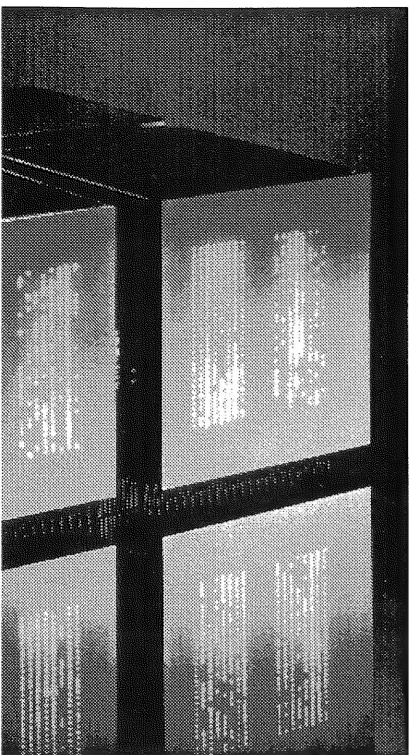
connection machine, cm-1/cm-2

By 1969 the electronic brain had entered popular culture: HAL 9000, the brain and nervous system of the spaceship in Arthur C. Clarke's "2001, A Space Odyssey". When HAL exhibits the rather human behavior of going psychotic and killing the other crew members, the remaining astronaut enters HAL's memory centers and performs a frontal lobotomy, shutting down the higher centers that control memory and speech. Our fear of the superior physical power of machines was augmented by the fear that machines will destroy us for philosophical and psychological reasons as twisted as any human being (see also the brilliant satire of 2001, "Dark Star"!)

In 1981 Stanislav Lem came up with a more positive view of an artificial brain in his book GOLEM XIV. The GOLEM series was developed by the military to do strategic war planning, just like Mark 1 and ENIAC. In contrast to Clarke's neurotic killer, however, GOLEM XIV declared that he was completely uninterested in the Pentagon's war doctrine in particular, and in the geopolitical position of the USA in general. A machine developed to be his successor declared that geopolitical problems were nothing compared to the ontological questions of existence, and the best guarantee for world peace is general demilitarization. (This machine was demolished immediately, of course.)

Lem summed up the dreams of GOLEM's designers with these words: "they transferred first their brains and then their thoughts alone into shining housings of metal and plastic. ... [and stored] their knowledge in the structure of space and their thoughts in the waves of light. Thus, they freed themselves from the tyranny of material and became creatures of light. ... pure energy."

Although technology has not advanced far enough to realize Lem's philosopher-machines, a similar vision powered the design of the Connection Machines CM-1 and CM-2, built by Thinking Machines Corporation. The design had tens of thousands of simple processors richly connected together like the neurons in the human brain. Like the human brain, the connections between processors could change depending on the problem to be solved. My job was to convey this exciting new architecture in the visual appearance of the machine, to make it immediately apparent this was a machine unlike any you had ever seen before.

The final design was a massive, 5 feet tall cube formed in turn of smaller cubes, representing the 12-dimensional hypercube structure of the network that connected the processors together. This hard geometric object, black, the non-color of sheer, static mass, was transparent, filled with a soft, constantly changing cloud of lights from the processor chips, red, the color of life and energy. It was the archetype of an electronic brain, a living, thinking machine.

With the fall of the Berlin Wall, the dissolution of the Evil Empire and thus the end of the Cold War, the funding for such supercomputers has disappeared. Parallel computing technology has entered the marketplace on a smaller scale in cheaper machines. Techniques that came out of artificial intelligence research have been enriching mainstream computer science. Artificial intelligence researchers have turned their sights towards modeling life, with the theory that intelligence does not arise from pure logic but rather from an embodied intelligence interacting with its environment.

After all, Lem said that the evolution of his philosopher-machines was first possible after creation of the "Federal Information Net", which served as a "nutritional matrix" for the creation of artificial minds. The computers that arose out of this process, he said, were the result of natural laws operating on the substrate of symbolic information. And that is one experiment that artificial life researchers are now performing using the substrate of the Internet.

Tamiko Thiel

media art

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Sources:

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Chapuis & Droz, "Automata: A Historical and Technological Study", Central Book Co., NY 1958
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NOVEMBER 15–19

Here Comes Everybody

The Music, Poetry, and Art of John Cage. An interdisciplinary conference and festival on Cage's contributions to 20th century culture. Includes a concert series, an exhibition of Cage's art, and a five-day conference with presentations by scholars and creative artists from around the world. Registration: $50.

Mills College Music Dept.
Here Comes Everybody
5000 MacArthur Boulevard
Oakland, CA 94613

NOVEMBER 18, 2:00 PM – 3:00 PM

Putting Silicon Valley's Newspaper Online

A lecture by Barry Parr, Product Development Manager of Mercury Center, the San Jose Mercury News' online service.

The Tech Museum
of Innovation
145 W. San Carlos Street
San Jose, CA 95113
Tel: (408) 279-7150
Fax: (408) 279-7167

NOVEMBER 19

Mobile Robotic Mice

Build a fast-moving, "wall-hugging" robotic mouse with motors and sensors and test it out with Hyperbot software. Take home your "mouse" car following the workshop. Recommended: any previous robotics workshop. Price includes mouse purchase. $40 nonmembers & $35 members.

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145 W. San Carlos Street
San Jose, CA 95113
Tel: (408) 279-7150
Fax: (408) 279-7167

NOVEMBER 20–22

ICAT/VRST '95

Tele-Existence '95. Conference on Virtual Reality Software and Technology '95 will be held in Makuhari, Chiba, Japan.

Secretariat of ICAT/VRST '95
Nihon Keizai, Shimbun, Inc.
Tel: +81/3-5255-2847
Fax: +81/3-5255-2860
mayumi@nws3.nikkei.co.jp

DECEMBER 2, 2:00 PM – 3:00 PM

Probing Jupiter: The Latest Mission

A lecture by Dr. Richard Young, Galileo Probe Project Scientist at NASA/Ames Research Center.

The Tech Museum
of Innovation
145 W. San Carlos Street
San Jose, CA 95113
Tel: (408) 279-7150
Fax: (408) 279-7167

DECEMBER 3, 2:00 PM – 3:00 PM

Galileo Probe Mission: An Overview

A lecture by Marcie Smith, Galileo Probe Manager at NASA/Ames Research Center.

The Tech Museum
of Innovation
145 W. San Carlos Street
San Jose, CA 95113
Tel: (408) 279-7150
Fax: (408) 279-7167

THROUGH DECEMBER 31

Virtual World: Multimedia and the Internet

Allows visitors a "test drive" of the Internet and new multimedia software. Among many exhibits are a visit to the underwater world of Monterey Bay via high speed, high capacity fiber optic link, allowing them to talk live with scientists at the Monterey Bay Aquarium. At other stations, visitors can learn to navigate various destinations on the World Wide Web, and at still others, experience multimedia entertainment and education. Also, the Multimedia Lab will be open most weekend afternoons, and most Tuesday and Thursday afternoons from 2:30 pm to 5:00 pm.

The Tech Museum
of Innovation
145 W. San Carlos Street
San Jose, CA 95113
Tel: (408) 279-7150
Fax: (408) 279-7167

THROUGH NOVEMBER 11

Windows of the Past and Future: The Computer Art of Uri Dotan

This exhibit features a cross-section of works by the artist, spanning a three year time period. Portions of the show will appear through November 11 on the World Wide Web, as well as additional images, some by Ylem members Barbara Nessim, Joan Truckenbrod and Roman Verostko. Gallery Hours: Tues-Sat 11 am - 5 pm & by apt.

The Williams Gallery
8 Chambers Street
Princeton, NJ 08542
Tel: (609) 921-1142
http://www.wmgallery.com
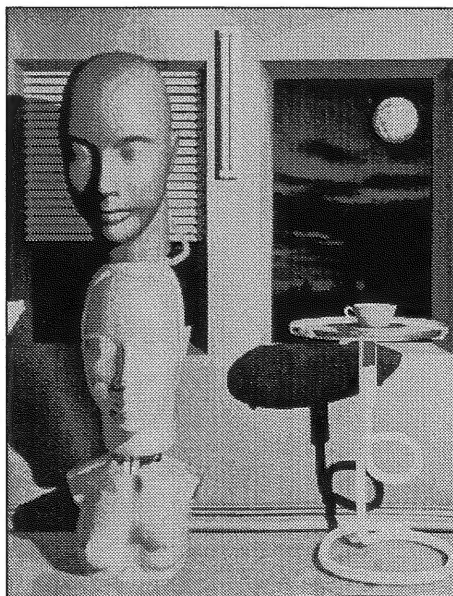
Uri Dotan, "Totemic Aspect", Iris print

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NOVEMBER 13-27

Third Annual New York Digital Salon

Included is Ylem member Sonya Rapoport's Web artwork, Smell Your Destiny.

visual arts museum
209 E. 23rd street
New York City, NY
http://www.sva.edu

THROUGH NOVEMBER 24

Weather Works: Nine Artists Face the Elements

Presented by Pacific Rim Sculptors Group and the Contract Design Center. Curated by Philip Linhares, Chief Curator of Art, The Oakland Museum. Hours: Monday-Friday, 9 am - 6 pm; for info, call (415) 864-8541.

sculpture courtyard,
design center
600 Townsend street
san francisco, CA 94103

THROUGH DECEMBER 2

Code

All the works in Code involve either animation, interactivity or virtual immersive space. Subsequent Code exhibits will explore the entire range of the digital art adventure. Prints, CDs and video tapes of the works will be available from the gallery. Present exhibit includes Ylem member Kenneth Snelson, and a highly recommended immersive work, Osmose, by Char Davies. Curated by Roz Dimon.

Ricco/Maresca Gallery
152 Wooster street
New York, NY 10012
Tel: (212) 780-0071
rmgal@aol.com
http://artnetweb.com/artnet
web/gallery/galhome.html

DECEMBER 1 – JANUARY 31

New Work by Dorothy Krause

Featured artist on the Williams Gallery Home Page.

http://www.wmgallery.com

THROUGH DECEMBER 4

Hereditary Allegories: a study in genetics

San Francisco artist Gail Wight will present her first major solo exhibition at Capp Street Project October 10-December 4, 1995. Wight, who received her MFA from the San Francisco Art Institute in 1994, will be in residence at Capp Street for the month of October to develop and build the installation. Gail Wight creates performances, installations, books and CD-ROMs that explore science as a form of storytelling. Her work often mimics scientific experimentation, resulting in somewhat absurd pieces that pose questions about ways of looking at the world and ourselves. Much of her recent work takes on issues of cognition and artificial intelligence.

capp street project
525 2nd street
san francisco, CA 94107
Tel: (415) 495-7101

THROUGH JANUARY 28

About the Size of It: The Circus of the Big and Small

The Exploratorium's new exhibit includes, Bowling Alley in a Bag and other Miniature Environments. A dozen of Helen Cohen's Miniature Environments will be on view at the Exploratorium. She creates miniature interiors inspired by the vintage objects in which they are housed. The 1950's pink flour canister is no longer in a 1950's kitchen; now the kitchen is inside the cannister itself Jim Pridgeon's Really Big Installation: "Large scale," according to Pridgeon, "sharpens our sense of the dynamic range between routine life and larger than life. The novelty of the large increases our attention to objects-heightens our awareness of them and ultimately makes us attend more rigorously to their more subtle features, their grace, depth, beauty." The Cardoso Flea Circus: An Installation by Maria Fernanda Cardoso: Flea circuses are for real! Ms. Cardoso, an artist in residence at the Exploratorium, will train the as-yet-untrained fleas during October and November. Admission: Adults: $9. Discounts for students, seniors, disabled, youth. Children 3-5 $2.50, under 3 free. First Wednesdays, free. Wheelchair accessible. Closed Mondays, open Wednesday evenings.

The Exploratorium
3601 Lyon street
san francisco, CA 94123
Tel: (415) 563-7337
fax: (415) 561-0307
pubinfo@exploratorium.edu

DEADLINE ASAP

Communications Policy Project

The Benton Foundation's Communications Policy Project promotes public interest values and noncommercial services for the National Information Infrastructure through research, policy analysis and outreach to nonprofits and foundations. We need a "lead evangelist" in our efforts to promote nonprofit applications of telecommunications technology. She or he will publicize successes and foster relationships among nonprofit organizations that are exploring the potential of the National Information Infrastructure (NII) and want to make the most of new technologies.

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benton foundation
communications
policy project
1634 Eye street N.W., 12th floor
washington, DC 20006
Tel: (202) 638-5770
fax: (202) 638 -5771
benton@benton.org
http://cdinet.com/benton

DEADLINE ASAP

SIGGRAPH 96 Online

This call for participation provides an overview of how to submit to all SIGGRAPH 96 programs. For the latest, most comprehensive information on program submissions, including many supplementary documents, please go to:

http://www.siggraph.org/
conferences/siggraph96
ftp://ftp.siggraph.org/
conferences/siggraph96
gopher://gopher.siggraph.org/
conferences/siggraph96

DEADLINE NOVEMBER 15

International Mona Lisa Mail Art Show

Nov. 24-Dec. 3, 1995. All entries accepted. Best of Show artist will participate in 4 person Winners' Show in 1996. Very specific entry dates and guidelines. Send SASE to:

Mona Lisa/CORE New Art Space
1412 Wazee Street
Denver, CO 80202

DEADLINE NOVEMBER 30

Ylem Directory Deadline Extended!

Details on insert page.

DEADLINE NOVEMBER 30

Merged Realities: A Synthesis of Art and Science

Central Arts Collective Gallery will host a national juried exhibition of work that portrays a fusion of art and science by subject matter and/or technology. February, 1996. Awards. Open to U.S. artists. All media. PROS send SASE to:

Merged Realities
Central Arts Collective
188 E. Broadway Boulevard
Tucson, AZ 85701
Tel: (520) 623-5883

DEADLINE DECEMBER 30

VIEWPOINTS

KQED's showcase of independent point-of-view works, seeks films & videos expressing "strong statements on important subjects;" submit VHS or 3/4" tapes (1.5 hour length preferred).

Greg Swartz, KQED
2601 Mariposa Street
San Francisco CA 94110
Tel: (415) 553-2269

DEADLINE JANUARY 1

ISEA'96

International Symposium of Electronic Art, held in Rotterdam, The Netherlands September 16-20, seeks abstracts of 500 words for papers either 20 minutes or 45 minutes in length. It will also have an art show (proposals for entire exhibits also sought at this time), workshops, concerts, performances, website and the use of Rotterdam's simulator for ship pilots for one week to use for virtual reality art. (Realize that if you are accepted they don't pay your way, just give a discount on the conference price).

HR 8 0 / ISEA 96
P.O. BOX 1272, 3000
Rotterdam, The Netherlands
Tel: 31-10-213 3003
Fax: 31-10-213 4190
isea96@hro.nl
http://www.xs4all.nl/~isea
(for the ISEA society)
http://www.eur.nl/ISEA96
(for ISEA 96)

AUGUST 6-8

SIGGRAPH 96
Art Market

SIGGRAPH 96, August 6-8 in New Orleans, has set aside a special area of the Exhibition for artists to sell their work. The Art Market will be open during Exhibition hours. For information about Art Market space fees and qualifications for participation, contact:

SIGGRAPH 96
Exhibition Management,
Hall-Erickson, Inc.
150 Burlington Avenue
Clarendon Hills, IL 60514
Tel: (708) 850-7779
Fax: (708) 850-7843
halleric@siggraph.org

DEADLINE ASAP

Convergence: The Journal of Research into New Media Technologies

Convergence is a new refereed academic journal which addresses the creative, social, political and pedagogical issues raised by the advent of new media technologies. Papers on any of the following areas are welcomed: the move from traditional media to multimedia, gender and technology, convergence of satellite media technologies and extraterrestrial broadcasting, cable and telecommunications, control and censorship, copyright, electronic publishing, media policy, education and new technologies, myths and representations of technology, problems of definition and terminology, and virtual reality. Proposals for articles or completed papers should be sent to:

Julia Knight or Alexis Weedon
Editors, Convergence
School of Media Arts
University of Luton
75 Castle Street
Luton, LUI 3AJ, UK
Tel: +44 1582 34111
Fax: +44 1582 489014
convergence@vax2.luton.ac.uk
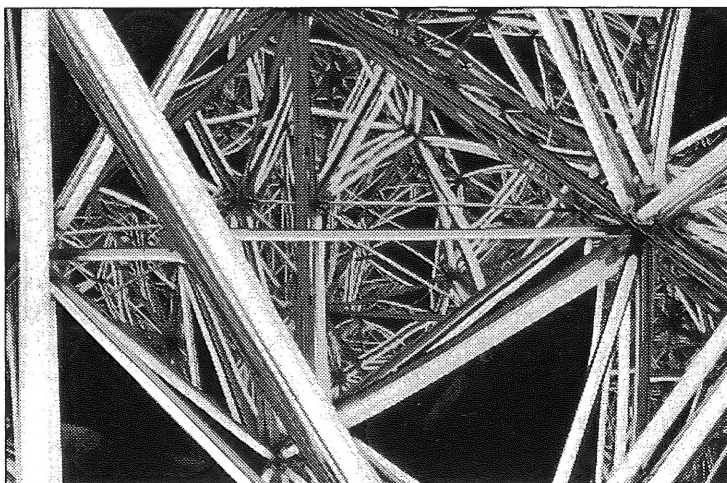
Harriet E. Brisson, Truncated 600-cell, fluorescent lights 8 mirror, 9' x 9' x 9'

Digital Giraffe

Ylem members are invited to submit an article to be published on the Electronic Quill page of the Digital Giraffe monthly art magazine online. Two typewritten pages on any subject related to art and culture, broadly defined. E-mail submissions to Ylem member:

corinne whitaker
Tel: (408) 624-1833
fax: (408) 624-2169
giraffe@giraffe.com
http://www.giraffe.com

Undercurrent: Call for Submissions

Undercurrent is a free journal available as electronic text on the Internet. Undercurrent Issue 4 will be devoted to a special topic: "Culture Wars." To see previous issues, open this URL address with any web browser such as Netscape, Mosaic, or Lynx:

undercurrent
erick heroux
Dept. of english
university of oregon
eugene, OR 97403
http://darkwing.uoregon.edu/
~heroux/home.html
heroux@darkwing.uoregon.edu

Needs/Offerings

First Annual Cacophony Drive-in-Movie, Short Film Video Festival

For information on sale of tapes ($29.95 ea.,+$3.95 shipping & handling), contact International Media at:

Dave krzysik @ Int'l media
P.O. Box 881911
san francisco, CA 94188
Tel: (415) 641-4005

Creativity Cafe@SFDMC

Calling Art Lovers to the Creativity Cafe. Share your talents, and glimpse the future. Cu-SeeMe multicast on Internet, poetry in motion, singalongs (bring instruments), and participatory theater. Bring your digital and traditional portfolios for large-screen projection & audience interaction. Admission $15 ($5 off with portfolio or instrument). Creativity Cafe, 3435 Cesar Chavez (formerly Army St.), #222 at corner of Valencia in S.F.. You may also tune into CU-SeeMe reflector at IP#205.134.226.23

peter h. rosen
founder & executive
coordinator
creativity cafe
2263 sacramento street, #2
san francisco, CA 94115
RSVP to: (415) 776-0821
voice mail: (415) 985-7040
for more details:
http://www.creativity.net/ccafe

Governor's Conference on the Arts (Los Angeles)

Theme: Arts, Entertainment and Technology: the Role of the Artist in the Digital Age. Presented by the California Art Council.

gawoodlock@aol.com

ACM's Special Interest Group on Computer-Human Interaction (ACM/SIGCHI)

CHI conferences in the past have provided important venues for learning about advances in the field of human-computer interaction. CHI now attracts a broad participant group including engineering psychologists, researchers, designers and performance artists, dealing with larger problems such as organizational integration of technology. The CHI 96 theme, Common Ground, acknowledges that each individual has a unique perspective that contributes to a core of knowledge and practice common to the entire community. Contact:

conference administrator
CHI 96 conference office
703 giddings avenue, suite U-3
annapolis, MD 21401
Tel: (410) 263-5382
fax: (410) 267-0332
chi96-office@acm.org

Art Planet-Art Cellar Exchange

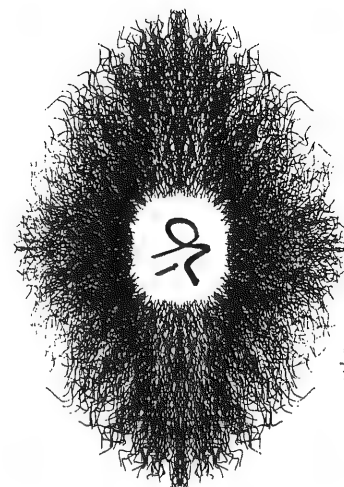*The Internet fine art directory for buying and selling fine art.*
http://www.artplanet.com
http://www.artcellarex.com/~ace
email: findit@artplanet.com
ace@artcellarex.com

roman verostko

CLICK 1.0

CLICK is designed to bridge the gap between the arts and technologies markets, attracting the hitherto ignored market of nontechnical creative people who have seen the potential of interactive new media for their own work. These are people (working in the broadcast and print media, publishing, marketing, design, museums, training and the arts) interested in the creative techniques driving CD-ROM and on-line publishing, rather than the tools and technical jargon. They are content people, the next generation in new media, and the ultimate riders of the digital communications wave.

amanda wise, editor
CLICK magazine
radiant productions
645 harris street, level 2
ultimo, sydney 2022, australia
Tel: +612 281 3977
fax: +612 281 8077
amandaw@radiant.com.au
http://www.click.com.au

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Computer Events Directory

Listing computer conferences, conventions, exhibitions, seminars and trade shows. A mail-on-demand version of the Directory will be developed soon using a product from Star Nine that will allow anyone with an email account to access and query the data. KnowledgeWeb:

http://www.kweb.com

Computer Music Journal

Since 1977, Computer Music Journal has been the most respected single source on the application of computers to the world of music. It covers composition, performance, sound production, music printing, score analysis, and all aspects of digital audio. $42 per year, $30 for students; get a free back issue with your paid subscription.

Computer Music Journal
MIT Press Journals
55 Hayward Street
Cambridge, MA 02142-1399
charge card orders:
(617) 253-2889 (M-F, 9-5 ET)
fax: (617) 258-6779 (24 hours)
journals-orders@mit.edu

Convergence: The Journal of Research into New Media Technologies

Convergence is a new refereed academic journal which addresses the creative, social, political and pedagogical issues raised by the advent of new media technologies. It will provide a forum for monitoring and exploring developments, and for publishing vital research, in areas such as: the move from traditional media to multimedia, gender and technology, control and censorship, copyright, electronic publishing, media policy, education and new technologies, and problems of definition and terminology. Convergence will be published twice a year in spring and autumn. ISSN: 1354-8565 Published by the Department of Media Arts, University of Luton, and John Libbey & Co. Ltd. Institutional subscription rates: all countries (except N. America) surface mail L40; air mail L45. N. America surface mail $80, air mail $90. Private rates: all countries (except N. America) surface mail L18, air mail L23. N. America surface mail $32, air mail $40. Orders should be sent to:

John Libbey & Co. Ltd.
Journal subscriptions
13 Smiths Yard, Summerley Street
London, SW18 4HR
Tel: +44 181 947 2777
fax: +44 181 947 2664

Interactive Media Festival

Interactive Systems Research Group at Teeside University in the UK.

http://www.tees.ac.uk/isrg
/isrg.htm

Join BMUG

What started as the Berkeley Mac Users Group has become a national resource because of its helpful information. A partial list of services: Planet BMUG and BMUG Boston BBSes to be accessible via the Internet.Innovative and timely CD-ROMs. In-person Helpline Clinics at the Berkeley office.Youth Outreach: Free memberships and modems to youth who may not have access. You can help this effort by donating an extra membership or modem. Newsletter featuring reviews and articles on the latest industry developments. CD-ROM included. Membership $65 per year.

BMUG, Inc.
1442A Walnut Street, #62
Berkeley, CA 94709
Tel: (510) 549-2684
fax: (510) 849-9026

Keys to Infinity

By Ylem member Clifford Pickover (New York: John Wiley, 1995; ISBN 0-471-11857-5, $24.95). Many black and white and color illustrations and program code. "In this the latest of Dr. Pickover's marvelous books, he breaks all finite chains to soar into the transcendental, mind-boggling regions of mathematical infinity." -Martin Gardner. "Keys to Infinity is an original and exciting exploration of how utterly weird, and utterly beautiful, the infinite can be." -Ian Stewart.

"Media Forensics" Catalog of Dead Media

"This is a book I want to read, but I don't necessarily want to write it."-Bruce Sterling. Ylem member Sterling wants your descriptions of old technologies for communicating that somehow died. This will be an online project that grows into a compendium, available to all.

bruces@well.com

Multimedia Classes

The Center for Electronic Art in San Francisco offers a wide range of multimedia classes for beginners or those needing to brush up. CEA is a nonprofit educational facility specializing in teaching art and design programs and offer substantial discounts to others employed by nonprofit organizations. Call for more information.

Center for Electronic Art
250 4th Street
San Francisco, CA, 94103
Tel: (415) 512-9300
http://www.cea.edu

Multimedia Reporter

Chronicling information and events for multimedia professional and enthusiasts in the San Francisco Bay Area. Membership subscription:

NBMA
P.O. Box 150296
San Rafael, CA 94915

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Multimedia Studies Program Resource Center

The San Francisco State University Multimedia Studies Program has grown in three years from a single introductory course and 25 students to over 80 classes, 70 faculty members, and 1,800 students. The resource center opened in August 1994 and includes access to computer-based learning materials and CD-ROMs in addition to a library.

san francisco state university
multimedia studies
425 market street, 2nd floor
san francisco, ca

Nth Art

A series of 13 30-min programs on the relationship between art and technology. Each program presents work by international artists, shows animations of technical processes and includes interviews with artists and critics.

gram, universite du
quebec a montreal
p.o. box 8888, station a
montreal, quebec, canada
H3C 3P8
tel: (514) 987-8237
fax: (514) 987-4651

NYU Center for Digital Multimedia

Sample seminars include: Perl & CGI-BIN Programming, Design of Interactive Learning Applications, and WWW Server Setup and Administration. New York University also offers extended 10- and 12-week courses on multimedia tools and technologies.

nyu center for digital
multimedia
attention: steve cooney
719 broadway, 12th floor
new york, ny 10003
tel: (212) 998-7190
http://crdm.nyu.edu

The Art Matters Catalog

"Buying a gift from the Art Matters Catalog supplies the money for direct grants to emerging artist. It's that simple." -William Wegman, Artist Art Matters Inc. is one of the few private foundations in the country devoted to providing direct support to contemporary artists. Since 1985, it has awarded nearly $3 million in fellowships to some 3,000 individuals.

1-800-979-ARTS
http://artmatters.com

The Pattern Book

Fractals, art and nature by Ylem member Clifford Pickover. (World Scientific, ISBN 987021426x, $57). Dozens of contributors share their algorithms for making sophisticated patterns, many of which relate to chaos and fractals. Lavishly illustrated, with a few in color. Besides Pickover himself, several Ylem Artists are included: Ilene Astrahan, Robert Brill, Craig Cassin and W.H. Cozad. Also, a few ingenious hand-drawn patterns are included. This is one of the many books linking computing and art produced by Pickover, a researcher at IBM's T.J. Watson Research Center.

Urgent Images: The Graphic Language of the Fax

Includes Ylem artist Lillian Bell, who publishes a fax network directory, F'AXis, which includes over 220 artists from 29 countries who interact by fax, actively encouraging an alternative method of making and displaying art outside the commercial system of gallery ownership. Distribution in the USA: ISBN 0-688-1405-72

id book service
126 old ridgefield road
wilton, ct 06897
tel: (203) 834-2272
fax: (203) 762-9725

VRML for Macintosh

The first VRML, or Virtual Reality Markup Language, viewer for the Mac, Whurlwind. The QuickDraw 3D based program works as a World Wide Web browser helper application and allows Mac users to view VRML 1.0 compliant files. It runs only on PowerMacs and, since it is based on QuickDraw 3D, requires a hefty 32 Mbytes of RAM.

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Note: All events and exhibits are in the San Francisco Bay Area except where noted. Is your event or exhibit listed here? Send to:

ylem editor
967 moreno
palo alto, ca 94303

Some calendar items are reprinted from Art Calendar (the monthly marketing and career management journal for artists, P.O. Box 199, Upper Fairmount, MD 21867. Subscriptions $32/yr.), Wired, Multimedia Reporter (from North Bay Multimedia Assn.), Video Networks (from BAVC), I/O (NYC Chapter, SIGGRAPH), Northwest Cyberarts and ISEA Newsletter; ArtsWire CURRENT , Leonardo Electronic Almanac, Fusion and FineArts Forum e-mail. We cannot verify all information sent to us. Readers, inform us of incorrect or false information, please.
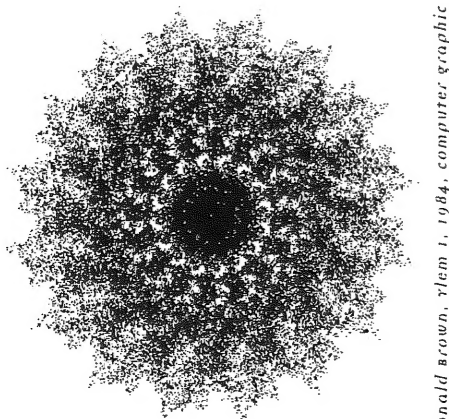
ronald brown, ylem 1, 1984, computer graphic

sketch by myrrh, bruce sterling

Science fiction writer and Ylem member Bruce Sterling generously tossed disks of his writing into the audience at ISEA '95 in a gesture against forces that would control electronic publishing for profit and make dispersing information subject to the whims of a small group. As he talked about gathering people together for work on his "Dead Media Project" on the Net, he pulled a homemade quipu out of his pocket to illustrate a kind of communication system that had been killed as a new system arose to replace it: the Spanish substituted letters on parchment for Inca knots in string. He listed the kinds of media that have been left behind: rotoscopes, magic lanterns, typewriters. His research continues, and he hopes to include material from anyone who is interested in contributing to this search and examination. Bruce can be e-mailed at: bruces@well.com

Copy Art was featured in two galleries and a panel discussion. At the Centre Copie-Art was a show curated by Monique Brunet-Weimann and Jacques Charbonneau of pioneer women copy artists who showed early work from the 70's and 80's and vigorous new work that took advantage of the changes in technology. Sonia Sheridan, who founded the Generative Systems workshops at the Chicago Art Institute and is the continuing guru in the field of copy art and electrostatic prints, showed some pages from her early notebooks and a recent 6' by 6' collection of photocopies in warm colors of faces of five women friends. One of Sheridan's early students Marisa Gonzalez, who now lives and exhibits in Madrid, showed some small impressionistic figures in her early work, and large size photos of doll heads in delicate tones of silvery gray and black. Joan Lyons who co-founded the Visual Studies Workshop in Rochester had an early Halloid xerox print of herself and a later quilt with color transfers of wooded scenes in the squares. Sarah Jackson, Ylem member from Halifax, included her fragile, lacy butterfly prints and her newer abstract Canon prints in honor of women in the Holocaust. The most spectacular work was a montage by Lieve Prins of 36 Canon laser prints of fish and naked bodies swirling around in colors as sumptuous as any Flemish paintings . Lieve, who is Belgian, has a copier in her studio in Amsterdam, and places models and myriad fresh fish in patterns on the glass, then shines a light following the scanner to enhance the rich color of the background. The bodies float in turquoise space evoking the sensuality and abundance of the Baroque era.

All the women who spoke at the panel at the University of Quebec campus mentioned their delight in the tactile pleasure and the immediacy of working with copiers. They were surprised and heartened that many had made similar discoveries about methods and philosophies about copy art though they had been working in isolation from each other. It was an interesting gathering of creative, diverse women whose exploration of copigraphy continues.

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The second show of copy art was at a gallery at Les Atriums. There was a room with copies of granite filling the floor in curls to look like the choppy surface of the ocean by Georg Muhlek. Jacques Charbonneau made a game of "Chutes and Ladders" 15 feet square with each step of the game a xerox of a different historical person or event in Quebec history, leading up to Quebec independence. Sylvie Pronovost's installation of bundles of magazines and newspapers piled in front of a life-sized montage of Canon prints of her lying on top of huge piles of art magazines on a sidewalk in New York City: a critique of what is thrown out by our society.

Overall the art at the ISEA 95 conference was more interactive than visual. Most of the exhibits in the three floors of art in the official show at Ecole Cherrier were installations that invited participation by the visitor. A copper mesh covered cage grounded out the window by a cable was available to people who wished to sit inside it and be shielded from cosmic rays. Volcanic eruptions occurred in a model in a glass case when a visitor passed a laser beam and set off smoke and lights. Various sounds in a dark room could be triggered by someone shining a flashlight on light-sensitive wires. Computer stories and games were set up at individual workstations, and comic robots jumped up and down in barrels of water as people walked through the room. Among the best of the interactive artworks at individual computer stations was Ylem members Sonya Rapoport's and Craig Harris' playfully philosophic computer game "The Transgenic Bagel".

sketch by myrrh

Excellent simultaneous translation from French to English kept the momentum of the discussions going which averted the tedium of repetition or the feeling of exclusion.

A speaker from the Netherlands Geert Lovink said technology does not always help. He showed a video from Bosnia in which artists who made the tape between bombings and broadcast despite government prohibitions, said they were waiting in vain for the "CNN effect" to take place. Cameras and crews would come to Bosnia, take pictures of the war, send them to the rest of the world, go away, and nothing would happen...there would be no reaction to all the bombings, beatings and privations that were recorded. Comparing this to earlier results from news of famines, droughts, mudslides, earthquakes, riots, shows there is a kind of de-sensitizing that is going on with all this technology.

There was a comment from one of the ISEA planners that not every electronic artist has a modem or email address or web access. When he suggested that maybe about one half of the people coming to ISEA had them the audience seemed to concur. People seem more deeply involved with the philosophical aspects of electronic art than the hardware or purely technical areas. The next ISEA will be held in Rotterdam in September of 1996.

YLEM ORGANIZATION

Beverly Reiser
president

Trudy Myrrh Reagan
vice-president & founder

Gary Zellerbach
treasurer

The newsletter production staff
would like to apologize for the
delay and for any inconvenience
that this may have caused any of
the Ylem members. Thank you for
your patience.

APPLICATION FOR MEMBERSHIP FORM:

To become a member of YLEM, send the following information and your check to:

YLEM: MEMBERSHIP • P.O. BOX 749 • ORINDA, CA 94563 • USA

NAME _____

BUSINESS NAME _____

ADDRESS _____

_____

TEL (HOME): _____   BUSINESS TEL: _____

FAX: _____   E-MAIL: _____

DESCRIBE YOUR WORK/INTERESTS IN 30 WORDS OR LESS _____

_____

_____

_____

ylem is an international organization of artists, scientists, authors, curators, educators, and art enthusi-

y'lem, *n.,* pronounced eye-lum, 1. is a greek word

asts who explore the intersection of the arts and sciences. with science and technology as driving forces in

which is the exploding mass from which the

contemporary culture, ylem members strive to bring the humanizing and unifying forces of art to this

universe emerged.

arena. ylem members work in new art media such as computers, kinetic sculpture, interactive multimedia,

holograms, robotics, 3-D media, film, and video.

(**YLEM**)

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USA

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website**
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oakland, CA 94611
e-mail: beverly@idiom.com
http://www.ylem.org/ylem/